



Jan, 2007

## **Express Ethernet Switch**

**Modular Unit: LB9217A-R2**  
**1 Port Module: LB9220C-ST-R2**  
**LB9220C-SC-R2**  
**8 Port Module: LB9213A**  
**LB9214A**  
**LB9215A**  
**LB9216A**  
**LB9218A**  
**LB9219A**



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**Class A Digital Device.** This equipment has been tested and found to comply with the limits for a Class A computing device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. If this equipment does cause harmful interference to radio or telephone reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an experienced radio/TV technician for help.

**Caution:**

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

To meet FCC requirements, shielded cables and power cords are required to connect this device to a personal computer or other Class A certified device.

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par le ministère des Communications du Canada.

Normas Oficiales Mexicanas (NOM)  
INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
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3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
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6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
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10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser conectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.
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14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las líneas de energia.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objetos liquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
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  - B: Objetos han caído o líquido ha sido derramado dentro del aparato; o
  - C: El aparato ha sido expuesto a la lluvia; o
  - D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
  - E: El aparato ha sido tirado o su cubierta ha sido dañada.

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This Equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received; including interference that may cause undesired operation.

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This equipment complies with the requirements relating to electromagnetic compatibility, EN 55022 class A for ITE, the essential protection requirement of Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

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## **Preface**

This manual describes how to install and use the 17-Port Fast Ethernet Switch. The switch introduced here is a base unit providing 3 expansion slots, including two slots for 8-port modules and one slot for single-port module. The 8-port modules allow for 10/100BaseTX or 100BaseFX; the single-port module allows for 10/100BaseTX or 100BaseFX. Over a dozen of TX and FX modules or a combination of TX/FX are available for fitting the switch. Furthermore, the 17-Port Switch supports port-based VLAN and MAC-based trunking technologies.

To get the most out of this manual, you should have an understanding of networking concepts such as bridging, IEEE 802.3u 100BaseTX/FX Fast Ethernet, and local area networks (LANs).

In this manual, you will find:

- Features on the 17-Port Switch
- Illustrative LED functions
- Installation instructions
- Configuration instructions for VLAN & trunking
- Specifications

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## **Introduction**

### **17-Port Modular Fast Ethernet Switch**

#### High Port Count

The 17-Port Switch is a modular switch consisting of three expansion slots: two for 8-port 10/100BaseTX/FX module, and one for 1-port 10/100BaseTX or 100BaseFX module. This allows the switch to provide up to 17 ports when all the three slots are fit with modules.

#### Cost-Effective Migration

The 17-Port Switch is capable of integrating legacy 10Mbps networks with 100Mbps Fast Ethernet networks. In addition, the 17-Port Switch provides an easy and affordable solution for migrating from copper cabling to fiber connection when it is equipped with suitable modules to provide both TX and FX ports.

#### Flexibility through Modules

Seeing fiber connection become popular while the fiber cabling in small business environment is still not widespread, the 17-Port Switch is designed to deliver flexibility through a wide variety of TX and FX modules. Most of the modules combine TX and FX ports to provide more customization options.

<NOTE> Desired module shall be ordered separately.

#### Fiber-Connectivity

As a Fast Ethernet switch, the 17-Port Switch is specifically designed to meet the demanding need for fiber. The switch provides up to 17 ports for 100BaseFX, multi-mode or single-mode fiber. For multi-mode fiber port, it allows SC, ST, MT-RJ, VF-45 or LC connector. For single-mode fiber port, it allows SC or ST connector. The fiber ports allow maximum segment distance of 120 km when using single-mode fiber, and therefore, the 17-Port Fiber Switch is an optimum solution for long distance connection.

#### Basic Configuration Features

The 17-Port Switch supports port-based Virtual Local Area Networking (VLAN) and MAC-based trunking technologies. Such advanced features bring network administrators a powerful yet easy-to-use tool to reduce unnecessary traffic, efficiently segment the network, and enhance network security.

#### Standards Compliant

The 17-Port Switch fully complies with IEEE802.3 10BaseT as well as IEEE802.3u 100BaseTX/FX standards.

## Product Features

- ◆ Base unit with three expansion slots
- ◆ Auto-negotiation for speed and duplexity on TX ports
- ◆ Auto-MDI/MDI-X on TX ports
- ◆ Store-and-forward mechanism
- ◆ True non-blocking architecture
- ◆ Full wire-speed forwarding rate
- ◆ Broadcast storm filtering
- ◆ Back-pressure and IEEE 802.3x compliant flow control
- ◆ Supports 12K MAC addresses
- ◆ Supports 2M Bytes buffer memory
- ◆ Front panel reset button
- ◆ Front panel port status LEDs
- ◆ Standard 19" rack-mount size, one-unit-height

### Modules:

- ◆ Allows two 8-port expansion modules: each of up to eight ports for 10/100BaseTX or 100BaseFX
- ◆ Allows one single-port expansion module: one port for 10/100BaseTX or 100BaseFX

### Connectors:

- ◆ Choices of SC, ST, MT-RJ, VF-45, or LC connectors for 100BaseFX multi-mode fiber module
- ◆ SC or ST connector allowed for 100BaseFX single-mode fiber module

### Basic Configuration Support:

- ◆ Supports port-based VLAN & MAC-based Trunking
- ◆ Programmable re-configuration for fixed speed and duplexity
- ◆ Programmable re-configuration for Back-pressure and IEEE 802.3x compliant flow control



## Packing List

When you unpack this product package, you will find the items listed below. Please inspect the contents, and report any apparent damage or missing items immediately to our authorized reseller.

- The 17-Port Switch
- User's Manual
- AC power cord
- RS232 cable
- Rack Mount Ears with screws

## Front Panel

The front panel of the 17-port Switch consists of three expansion slots to house two 8-port modules and one single-port module.

An array of LED indicators on each module provides you with instant feedback on the status of the switch.

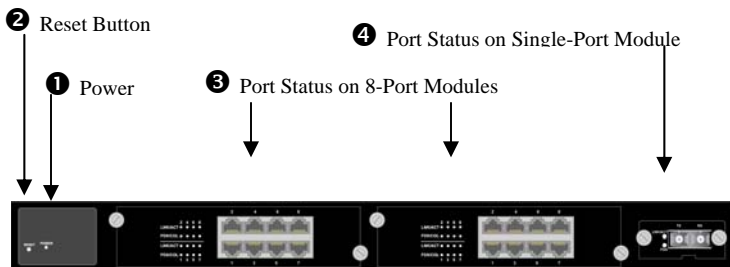


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Figure 1: Front View of the 17-Port Switch

## LEDs & Reset Button

The array of LED indicators on the front panel conveys status and configuration information to help you monitor and troubleshoot the switch.



### 1 Power

This LED comes on when the switch is connected to power and turned on.

### 2 Reset Button

If the switch should become unresponsive, you may reset it by pressing this button.

### 3 Port Status on 8-Port Modules

The front panel of the 17-Port Switch allows two 8-port modules. The ports numbered from 1 to 8 on full TX module.

The LEDs are located at the left side of each section, displaying status for each respective port. Please refer to Table 1 for more details.

Table 1: Port Status

LED	State	Indication
LNK/ACT	Steady	A valid network connection established. LNK stands for LINK.
	Flashing	Transmitting or receiving data. ACT stands for ACTIVITY.
FDX/COL	Steady	Connection in full duplex mode. FDX stands for FULL-DUPLEX.
	Flashing	Collision occurred. COL stands for COLLISION.
	Off	Connection in half-duplex mode.

### 4 Port Status on Single-Port Module

A set of two LEDs conveys the port status on the single-port module. Consult Table 2 for details.

Table 2: Port status on single-port Module

LED	State	Indication
LNK /ACT	Steady	A valid network connection established. LNK stands for LINK.
	Flashing	Transmitting or receiving data. ACT stands for ACTIVITY.
	Off	No valid network connection established.
FDX	Steady	Connection in full duplex mode. FDX stands for FULL-DUPLEX.
	Off	Connection in half duplex mode.

### **Ports**

#### Up to 17 Ports

The 17-Port Switch provides up to 17 ports for 10/100BaseTX or 100BaseFX, etc.

#### Multi-Connectivity

The 8-port modules allow for 10/100BaseTX or 100BaseFX, and the single-port modules allow for 10/100BaseTX or 100BaseFX.

For 100BaseFX modules, the multi-mode fiber ports accommodate ST, SC, MT-RJ, VF-45, or LC connector, and the single-mode fiber ports accommodate SC or ST connector.

#### Longer Segment Distance

The maximum connection distance between a node and a switch port is up to 120 km over single-mode fiber for 100BaseFX networks. For information on the cables for fiber module installation, please refer to Table 3.

## Installation

This chapter gives step-by-step installation instructions for the 17-Port Switch.

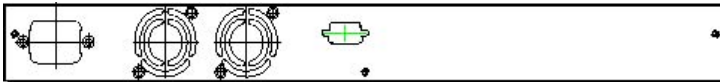
### Selecting a Site for the Switch

As with any electric device, you should place the switch where it will not be subjected to extreme temperatures, humidity, or electromagnetic interference. Specifically, the site you select should meet the following requirements:

- The ambient temperature should be between 32 and 113 degrees Fahrenheit (0 to 45 degrees Celsius).
- The relative humidity should be less than 90 percent, non-condensing.
- Surrounding electrical devices should not exceed the electromagnetic field (RF) standards for IEC 801-3, Level 2 (3V/M) field strength.
- Make sure that the switch receives adequate ventilation. Do not block the ventilation holes on each side of the switch or the fan exhaust port on the rear of the switch.
- The power outlet should be within 1.8 meters of the switch.

### Connecting to Power

- Connect the supplied AC power cord to the receptacle on the back of the switch, and then plug it into a standard AC outlet with a voltage range from 100 to 240 Vac.



---

Figure 3: Rear view of the switch

## Connecting to Your Network

### Cabling

- First, ensure the power of the switch and end devices is turned off.

<NOTE> Always ensure that the power is off before any installation.

- Prepare cable with corresponding connectors for each type of port in use.

<NOTE> To connect two regular RJ-45 ports between switches or hubs, you need a cross-over cable.

- Consult Table 3 below for cabling requirements based on connectors and speed.
- Connect one end of the cable to the switch and the other end to a desired device.
- Once the connections between two end devices are made successfully, turn on the power and the switch is operational.

### Cable Length

The maximum distance between a node and a directly connected switch port on a 100BaseFX network is 120 km using 10/125 $\mu$ m single-mode fiber optic cable. It is capable of spanning at most 2 kilometers when use of 62.5/125 $\mu$ m multi-mode fiber-optic cable.

Table 3: Cable Specifications

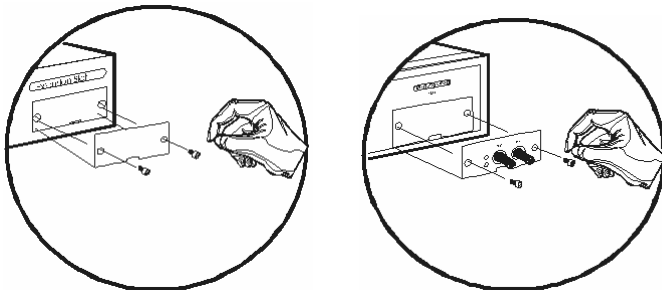
Speed	Connector	Port Speed Half/Full Duplex	Cable	Max. Distance
10BaseT	RJ-45	10/20 Mbps	Cat. 3, 4 or 5 UTP/STP	100 m
100BaseTX	RJ-45	100/200 Mbps	Cat. 5 UTP/STP	100 m
100BaseFX	ST, SC, MT- RJ, VF-45, LC	100/200 Mbps	62.5/125 $\mu$ m multi- mode fiber	2 km
100BaseFX	SC, ST	100/200 Mbps	10/125 $\mu$ m single-mode fiber	120 km

## Module Installation

The installation for 8-port module and single-port module is the same. Take single-port fiber module for example.

- Remove the module from the static-free container.
- Unscrew the cover plate of the expansion slot. The slot for single-port module is located at the right side of the switch.
- Remove the plate and keep it for future use when you decide to remove this module.
- With the power off, slide the module into the desired slot, following the internal plastic guide rails.
- Once it is slid in fully, snap in the module to make a proper connection and fasten the screws.
- Finally, turn on the power.
- Consult the following illustrations before installation.

**<NOTE> Before you start with any installation, ensure that the power is off.  
The module is not hot swappable.**



---

Figure 4: Removal of cover plate      Fiber module being installed

## Switch Configuration

This section explains the configuration of VLAN and trunking settings.

### Setting up Console Port Connection

To configure your switch through the console port, it is necessary to first configure a terminal emulation program. The HyperTerminal for Windows 95, 98, and NT is suggested.

- First, check the switch, cables, and computers for proper installation before configuration.
- Connect a PC or any VT100 compatible terminal to the console port on the back of the unit using one RS232 serial cable. Turn on both end devices.
- Configure the baud rate and character format of the terminal or PC to match the default settings shown below.

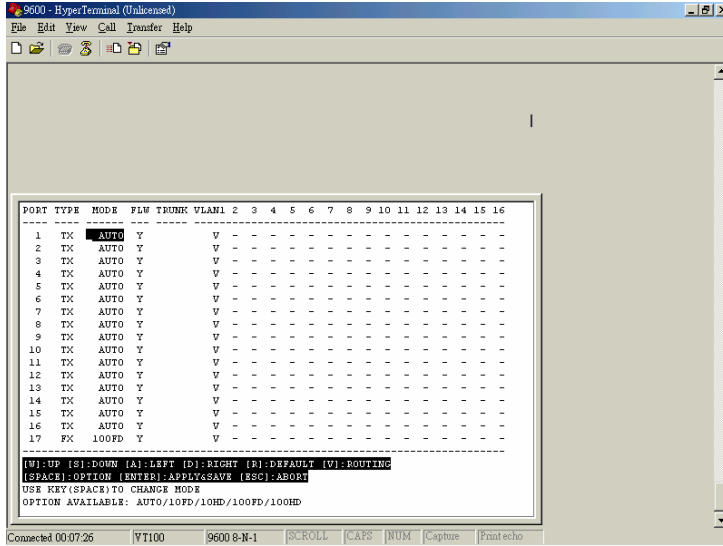
#### Console Port Default Settings

<b>Terminal type</b>	VT100
<b>Port type</b>	(COM 1~4)
<b>Communication Mode</b>	8 data bits, 1 stop bit, no parity baud rate of 115200bps (for initial configuration)
<b>Flow Control</b>	Yes
<b>Hardware Compression</b>	N/A

## Main Menu

This main menu shows you the default configuration of the switch.

By default, all TX ports are set at auto-negotiation and flow control on, all FX ports are set at 100Mbps with full duplex and flow control off, and all ports are grouped into V1 (VLAN group 1).



These are the valid commands; capitalization is not required:

- [W] Move the cursor up
- [S] Move the cursor down
- [A] Move the cursor to the left
- [D] Move the cursor to the right
- [R] Default
- [V] Routing
- [SPACE] Option
- [ENTER] Apply and save the setting
- [ESC] Abort



## Port Settings

The duplex mode and speed can be altered and the flow control can be turned on/off to accommodate special needs.

Follow these steps to change the speed/duplex mode setting or to toggle flow control ON/OFF:

- Move the cursor to **MODE** column to change the speed/duplex mode setting, or move the cursor to **FLW** column to change the flow control setting
- Move the cursor and select a port
- Press [**SPACE**] and select a desired setting from the list that appears on the screen
- Press [**ENTER**] to apply and save the setting

### FX Ports

The port setting for the fiber module is slightly different from the TX port. Consult the following table for a brief description on FX ports:

Table 4: Mode Setting on FX Ports

<b>Communication Mode</b>	<b>Description</b>
Flow control	Always N (off) and can not be changed
100FD	100Mbps at full duplex mode
100HD	100Mbps at half duplex mode

## **TX Ports**

Consult the following table for a brief description on TX ports:

Table 5: Mode Setting on TX Ports

<b>Communication Mode</b>	<b>Description</b>
Flow control on / off	Y (on) / N (off)
Auto	Auto-Negotiation
100FD	100Mbps at full duplex mode
100HD	100Mbps at half duplex mode
10FD	10Mbps at full duplex mode
10HD	10Mbps at half duplex mode

## Port-based VLAN & Settings

The 17-Port Switch allows up to sixteen port-based VLAN domains. Assign each port to a VLAN group or a couple of VLAN groups according to accessibility needs.

**The VLAN setting:** follow these steps to assign VLAN groups.

- Move the cursor to **VLAN1 ~ 16** column
- Move the cursor and select a port
- Press **[SPACE]** and show **V** to the desired port
- Press **[ENTER]** to apply and save the setting

For example, here we have the port 17 assigned as routing (uplink) port. The port 1 ~ port 16 are divided into five different VLAN groups (VLAN 1, 2, 3, 4, and 5).

VLAN 1: port 1, 2, 3

VLAN 2: port 4, 5, 6

VLAN 3: port 7, 8, 9

VLAN 4: port 10, 11, 12

VLAN 5: port 13, 14, 15, 16, 17

For example, the port 1, 2, and 3 (VLAN 1) can not communicate with the port 4, 5, and 6 (VLAN 2).

PORT	TYPE	MODE	FLW	TRUNK	VLAN1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1	TX	AUTO	Y		V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	TX	AUTO	Y		V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	TX	AUTO	Y		V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	TX	AUTO	Y			V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	TX	AUTO	Y				V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	TX	AUTO	Y					V	-	-	-	-	-	-	-	-	-	-	-	-	-
7	TX	AUTO	Y						V	-	-	-	-	-	-	-	-	-	-	-	-
8	TX	AUTO	Y							V	-	-	-	-	-	-	-	-	-	-	-
9	TX	AUTO	Y								V	-	-	-	-	-	-	-	-	-	-
10	TX	AUTO	Y									V	-	-	-	-	-	-	-	-	-
11	TX	AUTO	Y										V	-	-	-	-	-	-	-	-
12	TX	AUTO	Y											V	-	-	-	-	-	-	-
13	TX	AUTO	Y												V	-	-	-	-	-	-
14	TX	AUTO	Y													V	-	-	-	-	-
15	TX	AUTO	Y														V	-	-	-	-
16	TX	AUTO	Y															V	-	-	-
17	TX	LOOPB	R																	V	-

[M]:UP [B]:DOWN [A]:LEFT [D]:RIGHT [S]:DEFAULT [V]:ROUTING  
 [SPACE]:SPACE [ENTER]:APPLY [TAB]:TAB [ESC]:ABORT  
 USE KEY/SPACE TO CHANGE MODE  
 OPTION AVAILABLE: AUTO/10FD/10HD/100FD/100HD

**The routing (uplink) port setting:** follow these steps to have an assigned routing (uplink) port. Then separate the rest each port to a different VLAN group. The rest each port can only uplink through the assigned routing (uplink) port and can't communicate with each other.

- Enter **[V]** from the Main Menu
- Move the cursor to a desired routing (uplink) port
- Press **[SPACE]** and show **V** to the desired routing (uplink) port
- Press **[ENTER]** to apply and save the setting, then all the other ports will be assigned to each different VLAN group and use the desired port as the routing (uplink) port

For example, here we have the port 17 assigned as routing (uplink) port. The port 1 ~ port 16 are divided into each different VLAN groups. And the user on the port 1 ~ port 16 can uplink through the port 17 only and can not communicate with each other.

9600 - HyperTerminal

File Edit View Call Transfer Help

PORT	TYPE	MODE	FLW	TRUNK	VLAN1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	TX	AUTO	Y		V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	TX	AUTO	Y		-	V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	TX	AUTO	Y		-	-	V	-	-	-	-	-	-	-	-	-	-	-	-	-
4	TX	AUTO	Y		-	-	-	V	-	-	-	-	-	-	-	-	-	-	-	-
5	TX	AUTO	Y		-	-	-	-	V	-	-	-	-	-	-	-	-	-	-	-
6	TX	AUTO	Y		-	-	-	-	-	V	-	-	-	-	-	-	-	-	-	-
7	TX	AUTO	Y		-	-	-	-	-	-	V	-	-	-	-	-	-	-	-	-
8	TX	AUTO	Y		-	-	-	-	-	-	-	V	-	-	-	-	-	-	-	-
9	TX	AUTO	Y		-	-	-	-	-	-	-	-	V	-	-	-	-	-	-	-
10	TX	AUTO	Y		-	-	-	-	-	-	-	-	-	V	-	-	-	-	-	-
11	TX	AUTO	Y		-	-	-	-	-	-	-	-	-	-	V	-	-	-	-	-
12	TX	AUTO	Y		-	-	-	-	-	-	-	-	-	-	-	V	-	-	-	-
13	TX	AUTO	Y		-	-	-	-	-	-	-	-	-	-	-	-	V	-	-	-
14	TX	AUTO	Y		-	-	-	-	-	-	-	-	-	-	-	-	-	V	-	-
15	TX	AUTO	Y		-	-	-	-	-	-	-	-	-	-	-	-	-	-	V	-
16	TX	AUTO	Y		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	V
17	FX	100FD	N		V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V

[W]:UP [S]:DOWN [A]:LEFT [D]:RIGHT [R]:DEFAULT [V]:ROUTING  
 [SPACE]:OPTION [ENTER]:APPLY&SAVE [ESC]:ABORT  
 USE KEY(SPACE) TO CHANGE MODE  
 OPTION AVAILABLE: AUTO/10FD/10HD/100FD/100HD

Connected 00:27:09 Auto detect 9600 8-N-1 SCROLL CAPS NUM Capture Printecho

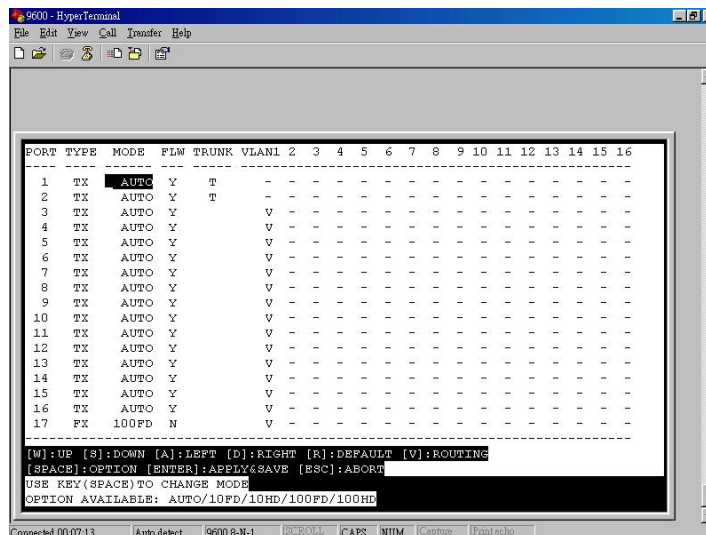
## MAC-based Trunking & Settings

Trunking is also called link aggregation, which serves as a shortcut to increase the bandwidth on your network. Trunking is a method of physically linking together several ports to act as a single port with higher bandwidth. This functionality allows scaling of bandwidth.

The 17-Port Switch supports trunking of up to 4 ports, either 2-port or 4-port. For a 100BaseTX/FX network, you will gain 400Mbps bandwidth when you trunk two ports, each of 200Mbps. The more ports you trunk, the more bandwidth you gain.

Follow these steps to configure the 2-port trunking.

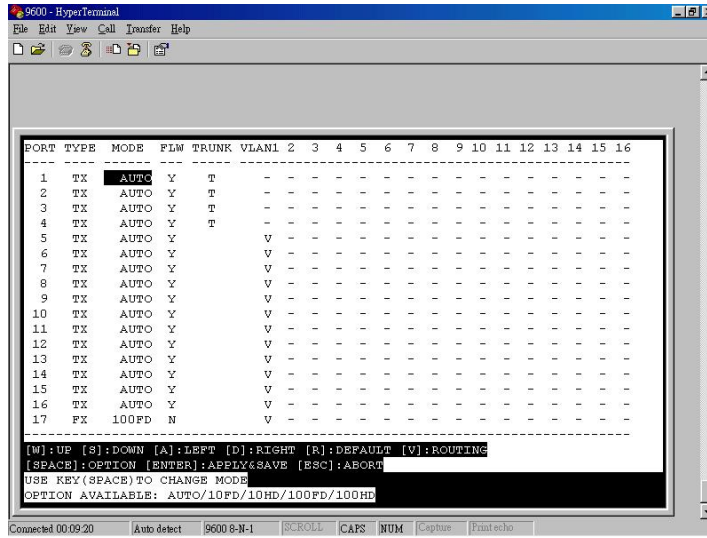
- Move the cursor to **TRUNK** column
- Move the cursor and select port 1
- Press **[SPACE]** and show **T** to port1 and port2
- Press **[ENTER]** to apply and save the setting



<NOTE> Can only choose port1 and port2 for 2-port trunking

Follow these steps to configure the 4-port trunking.

- Move the cursor to **TRUNK** column
- Move the cursor and select port 1
- Press **[SPACE]** and show **T** to port1 and port2
- Move the cursor and select port 3
- Press **[SPACE]** and show **T** to port3 and port4
- Press **[ENTER]** to apply and save the setting



<NOTE> The trunking ports will be disabled for VLAN group settings.

## Technical Specifications

	<b>17-Port Switch</b>
<b>Applicable Standards</b>	IEEE 802.3 10BaseT, IEEE 802.3u 100BaseTX/FX
<b>Optional 8-port Module Type</b> LB9213A; LB9214A; LB9215A; LB9216A; LB9218A; LB9219A	10/100BaseTX module 100BaseFX module, multi-mode or single-mode
<b>Optional 1-port Module Type</b> LB9220C-ST-R2; LB9220C-SC-R2	10/100BaseTX module 100BaseFX module, multi-mode or single-mode
<b>Speed</b>	10BaseT: 20Mbps for full-duplex; 10Mbps for half-duplex
	100BaseTX/FX: 200Mbps for full-duplex; 100Mbps for half-duplex
<b>Switching Method</b>	Store-and-Forward
<b>Performance</b>	14,880pps forwarding rate per port for 10Mbps
	148,800pps forwarding rate per port for 100Mbps
<b>Chassis LED Indicators</b>	Power
<b>Module LED Indicators</b>	For 8-port module: LNK/ACT; FDX/COL (2 LEDs)
	For 1-port module: LNK/ACT, FDX (2 LEDs)

## Physical Specifications

	<b>17-Port Switch</b>
<b>Dimensions</b>	440 × 285 × 45 mm 19" Rackmount Size, 1U
<b>Weight</b>	3.4kg (7.5lb)
<b>Power Input</b>	100 ~ 240 Vac, 50~60 Hz
<b>Power Consumption</b>	52W Max.
<b>Operating Temperature</b>	0° ~ 45°C (32° ~ 113°F)
<b>Storage Temperature</b>	-10° ~ 70°C (14° ~ 158°F)
<b>Humidity</b>	10 ~ 90%, non-condensing
<b>Emissions</b>	FCC part 15 Class A, CE Mark

## Appendix A – Connector Pinouts

Pin arrangement of RJ-45 connectors:

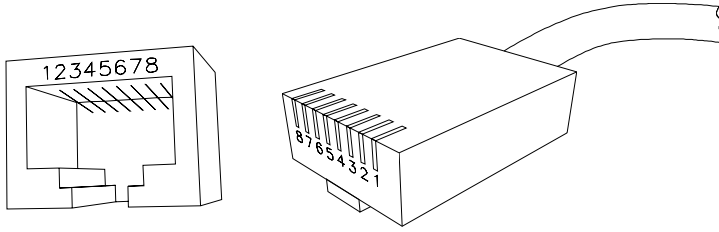


Figure 5: RJ-45 Connector and Cable Pins

The following table lists the pinout of 10/100BaseT/TX ports.

Table 6: Connector Pin-Out

Pin	Regular Ports	Uplink port
1	Input Receive Data +	Output Transmit Data +
2	Input Receive Data -	Output Transmit Data -
3	Output Transmit Data +	Input Receive Data +
4	NC	NC
5	NC	NC
6	Output Transmit Data -	Input Receive Data -
7	NC	NC
8	NC	NC